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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,203	08/18/2003	Nobuyuki Enomoto	MA-584-US	1083
21254 7590 06/27/2007 MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			EXAMINER LEE, BETTY E	
			ART UNIT 2616	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/642,203

Applicant(s)

ENOMOTO ET AL.

Examiner

Betty Lee

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Claim 13 is objected to because of the following informalities:

Claim 13 line 3 recites "a signal separator which separats the keep alive frames". It is suggested that "separates" is changed to --- separates ---. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims **1-63** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 lines 7-8 recites "configures and manages a spanning tree for every other network adjacent to the self-partial network". It is unclear what a "self-partial

network" is since it is not defined in relation to a "partial network". Claims 4, 17, 33, and 48 have a similar error.

Claim 1 recites the limitation "the node" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "said opposite nodes" in 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 lines 4-5 recites "each pair of the nodes for the same number as forming said partial network is connected to each different network". It is unclear how these nodes are connected.

Claim 3 recites the limitation "said node" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 lines 16-17 recites "puts the output port toward the self-partial network together". It is unclear how a port can be toward a network.

Claim 13 recites the limitation "the other frame" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 34 recites the limitation "said TTL manager step" in line 3. There is insufficient antecedent basis for this limitation in the claim. Claim 52 has a similar error.

Claim 57 depends on claim 58. However, a claim can not depend from a succeeding claim.

The remaining claims have the same or similar errors.

5. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 48-62 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 48-62 are directed to a program. A program per se is considered non-statutory subject matter. 35 USC 101 Interim Guidelines require subject matter directed to a program to be written in terms of "a computer readable medium encoded with computer executable instructions".

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims **1-3, 7, 15-19, 23, 31-34, and 46-49** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu et al. (US 2003/0165119) in view of Fukuda et al. (US 5,761,435).

Regarding claim 1, 17, 33, and 48, Hsu teaches two different networks are connected by a partial network consisting of at least four nodes accommodating no terminal, and the node belonging to said partial network configures and manages a ring (see Fig. 15). Hsu does teach that the invention may also be used with spanning tree protocol networks (see paragraph 56 lines 3-8). Hsu teaches all the subject matter of

the claimed invention with the exception of the node configuring and managing a spanning tree network.

However, Fukuda teaches a configuring and managing a spanning tree for every other network adjacent to the self-partial network, according to a spanning tree protocol (see Fig. 1 Boxes 62 and 64). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Fukuda in the system of Hsu. The motivation for doing so is to make the system more flexible.

Regarding claim 2 and 18, Hsu further teaches said partial network is formed by a link connecting said opposite nodes (see Fig. 15), and each pair of the nodes for the same number as forming said partial network is connected to each different network (see Fig. 15).

Regarding claim 3, 19, 34, and 49, Hsu teaches all the subject matter of the claimed invention with the exception of determining an output destination port from a destination MAC address and tree managers. However, Fukuda teaches a plurality of transfer units which determines an output destination port in every said partial network, based on a destination MAC address of an input frame (see Fig. 1 Boxes 53 and 63), and a plurality of tree managers which configures a spanning tree for every said partial network and said network, according to the spanning tree protocol and transfers a frame (see Fig. Fig. 1 Boxes 52 and 62). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Fukuda in the system of Hsu. The motivation for doing so is to make the system more flexible.

Regarding claim 7 and 23, Hsu teaches all the subject matter of the claimed invention with the exception of transfer units, tree managers, BPDU identifying unit. However, Fukuda teaches a plurality of transfer units which determines an output destination port in every said partial network, based on a destination MAC address of an input frame (see Fig. 1 Boxes 50 and 60), a plurality of tree managers which configures a spanning tree for every said partial network, according to the spanning tree protocol and transfers a frame (see Fig. 1 Boxes 52 and 62), and a BPDU identifying unit which determines a tree manager of an output destination of an input BPDU frame according to an identifier (see Fig. 3 Boxes 220 and 260). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Fukuda in the system of Hsu. The motivation for doing so is to make the system more flexible.

Regarding claims 15, 31, and 46, Hsu teaches a tag operation unit which inserts and deletes an identification tag (see paragraph 62). Hsu teaches all the subject matter of the claimed invention with the exception of transfer units and tree manager. However, Fukuda teaches a plurality of transfer units which determines an output destination port in every said partial network, based on an identification tag of the input frame (see Fig. 1 Boxes 50 and 60), and a multiphase tree manager which configures a spanning tree for every said partial network, according to the spanning tree protocol in every said identification tag of the input frame (see Fig. 1 Boxes 52 and 62). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Fukuda in the system of Hsu. The motivation for doing so is to make the system more flexible.

Regarding claims 16, 32, and 47, Hsu teaches a port blocking unit which closes or opens a port (see paragraph 59 lines 14-18). Hsu teaches all the subject matter of the claimed invention with the exception of a tree controller and BPDU transmitter/receiver. However, Fukuda teaches a tree controller which determines a state of a port according to the spanning tree protocol (see Fig. 1 Boxes 54 and 64), and a BPDU transmitter/receiver which transmits and receives a control signal of the spanning tree protocol (see Fig. 2 Box 120). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Fukuda in the system of Hsu. The motivation for doing so is to make the system more flexible.

11. Claims **4, 12-14, 20, 28-30, 35, 37, 38, 43-45, 50, 52, 53, and 58-62** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu et al. (US 2003/0165119) in view of Fukuda et al. (US 5,761,435) as applied to claims 3, 19, 33, 34, 48, and 49 above, and further in view of Seaman (US 6,882,630).

Regarding claims 4, 20, and 50, Hsu teaches all the subject matter of the invention with the exception of a tree manager and a virtual port. However, Fukuda teaches a tree manager which manages the spanning tree of the self-partial network (see Fig. 1 Boxes 52 and 62). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Fukuda in the system of Hsu. The motivation for doing so is to make the system more flexible. Hsu in view of Fukuda teaches all the subject matter of the claimed invention with the exception of a virtual port.

However, Seaman teaches a virtual port which packs into one the output ports (see Fig. 1 Box 109) to the self-partial network which connects said transfer unit (see Fig. 1 Box 113). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Seaman in the system of Hsu in view of Fukuda. The motivation for doing so is to make the system more efficient by having one entity handle the multiple ports.

Regarding claims 12, 28, 43, and 58, Hsu teaches all the subject matter of the claimed invention with the exception of a failure detector. However, Seaman teaches a failure detector which detects a failure through transmission and receipt of keep alive frames (see col. 10 lines 39-47). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Seaman in the system of Hsu. The motivation for doing so is to make the network more robust.

Regarding claims 13, 29, 44, and 59, Hsu teaches all the subject matter with the exception of a failure detector. However, Seaman teaches a signal separator which separates the keep alive frames from the other frame, and a keep alive signal transmitter/receiver which transmits and receives the keep alive frames (see col. 10 lines 39-47). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Seaman in the system of Hsu. The motivation for doing so is to make the network more robust.

Regarding claims 14, 30, 35, 45, and 60, Hsu teaches all the subject matter of the claimed invention with the exception of a frame blocking unit. However, Seaman teaches a frame block unit which cuts off the port at a time of double failure (see col. 10

lines 39-47). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Seaman in the system of Hsu. The motivation for doing so is to make the network more robust.

Regarding claims 37 and 52, Hsu teaches all the subject matter of the claimed invention with the exception of a TTL manager. However, Seaman teaches a TTL checker step of discarding the frame with reference to a TTL value, and a TTL controller step of performing addition and subtraction of the TTL value (see col. 9 lines 55-63).

Regarding claims 38 and 53, Hsu teaches all the subject matter of the claimed invention with the exception of transfer units, tree managers, BPDU identifying unit. However, Fukuda teaches a plurality of transfer units which determines an output destination port in every said partial network, based on a destination MAC address of an input frame (see Fig. 1 Boxes 50 and 60), a plurality of tree managers which configures a spanning tree for every said partial network, according to the spanning tree protocol and transfers a frame (see Fig. 1 Boxes 52 and 62), and a BPDU identifying unit which determines a tree manager of an output destination of an input BPDU frame according to an identifier (see Fig. 3 Boxes 220 and 260). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Fukuda in the system of Hsu. The motivation for doing so is to make the system more flexible.

Regarding claim 61, Hsu teaches a tag operation unit which inserts and deletes an identification tag (see paragraph 62). Hsu teaches all the subject matter of the claimed invention with the exception of transfer units and tree manager. However, Fukuda teaches a plurality of transfer units which determines an output destination port

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in every said partial network, based on an identification tag of the input frame (see Fig. 1 Boxes 50 and 60), and a multiphase tree manager which configures a spanning tree for every said partial network, according to the spanning tree protocol in every said identification tag of the input frame (see Fig. 1 Boxes 52 and 62). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Fukuda in the system of HSU. The motivation for doing so is to make the system more flexible.

Regarding claim 62, Hsu teaches a port blocking unit which closes or opens a port (see paragraph 59 lines 14-18). Hsu teaches all the subject matter of the claimed invention with the exception of a tree controller and BPDU transmitter/receiver.

However, Fukuda teaches a tree controller which determines a state of a port according to the spanning tree protocol (see Fig. 1 Boxes 54 and 64), and a BPDU transmitter/receiver which transmits and receives a control signal of the spanning tree protocol (see Fig. 2 Box 120). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Fukuda in the system of Hsu. The motivation for doing so is to make the system more flexible.

12. Claims **9 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu et al. (US 2003/0165119) in view of Fukuda et al. (US 5,761,435) and Seaman (US 6,882,630) as applied to claim 4 above, and further in view of Ambe (US 7,061,876).

Regarding claim 9, Hsu teaches all the subject matter of the claimed invention with the exception of an address learning unit. However, Ambe teaches an address learning unit which creates a table, based on an input port and a source MAC address

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of the received frame (see Fig. 3 Boxes 2 and 3); and a table which determines an output destination port by using the destination MAC address as a key (see Fig. 6).

Thus, it would have been obvious to one of ordinary skill in the art to use the system of Ambe in the system of Hsu. The motivation for doing so is to make the system more efficient by building a routing table.

Regarding claim 10, Hsu teaches all the subject matter with the exception of a table containing an output port field and MAC address field. However, Ambe teaches a table comprising a destination MAC address field which describes the destination MAC address, and an output port field which describes an output destination port corresponding to the destination MAC address (see Fig. 6). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Ambe in the system of Hsu. The motivation for doing so is to make the system more efficient by building a routing table.

13. Claims **25, 26, 40, 41, 55, and 56** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu et al. (US 2003/0165119) in view of Fukuda et al. (US 5,761,435) as applied to claims 19, 34, and 49 above, and further in view of Ambe (US 7,061,876).

Regarding claim 25, 40, and 55, Hsu teaches all the subject matter of the claimed invention with the exception of an address learning unit. However, Ambe teaches an address learning unit which creates a table, based on an input port and a source MAC address of the received frame (see Fig. 3 Boxes 2 and 3); and a table

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which determines an output destination port by using the destination MAC address as a key (see Fig. 6). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Ambe in the system of Hsu. The motivation for doing so is to make the system more efficient by building a routing table.

Regarding claim 26, 41, and 56, Hsu teaches all the subject matter with the exception of a table containing an output port field and MAC address field. However, Ambe teaches a table comprising a destination MAC address field which describes the destination MAC address, and an output port field which describes an output destination port corresponding to the destination MAC address (see Fig. 6). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Ambe in the system of Hsu. The motivation for doing so is to make the system more efficient by building a routing table.

Allowable Subject Matter

14. Claims 5, 6, 8, 11, 21, 22, 24, 27, 36, 39, 42, 51, 54, 57, and 63 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

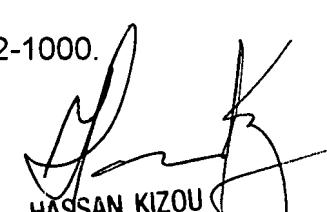
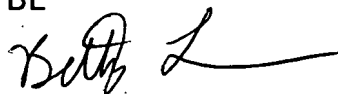
Malhotra et al. (US 2003/0161275), Lee (US 5,535,195), George et al. (US 4,644,532), and Fine et al. (US 6,813,250) are all cited to show systems which are considered pertinent to the claimed invention.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betty Lee whose telephone number is (571) 270-1412. The examiner can normally be reached on Monday-Thursday 9-5 EST and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BL



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